

Amendments to the Claims:

1. (original): A method of generating a content signature for a signal comprising the steps of:

dividing the signal into at least one set;

transforming the set into a frequency-based domain;

determining features of the transformed set; and

grouping the features to comprise a content signature of the set.

2. (original): A method according to claim 1, wherein the features comprise perceptually relevant features.

3. (original): A method according to claim 1, wherein the features comprise frequency magnitude peaks.

4. (original): A method according to claim 1, further comprising the step of storing the content signature.

5. (original): A method according to claim 1, wherein the step of grouping comprises one of the steps of hashing the features, mathematically representing the features, and mapping the features.

6. (original): A method according to claim 1, further comprising the step of storing the content signature in a database.

7. (original): A method according to claim 1, further comprising the steps of:
- dividing the signal into a plurality of sets;
 - transforming each of the plurality of sets into a frequency-based domain;
 - determining features for each of the plurality of transformed sets;
 - grouping the features per set to comprise a respective signature for each of the sets; and
 - linking the respective signatures.
8. (original): A method of resolving a stream of content signatures, the content signatures corresponding to sets of a content item, said method comprising the steps of:
- applying Viterbi decoding according to the stream of content signatures;
 - identifying a content item corresponding to the stream; and
 - accessing information related to the content item.
9. (original): A method of generating a content signature from compressed data, the compressed data having m bits, said method comprising the steps of:
- extracting n of the most significant of the m bits, where $m > n$, and n and m are integers; and
 - storing the n bits as the content signature.

10. (original): A method of generating a content signature from a content item comprising the steps:

in a compressed domain, identifying scaling features of the data; and
grouping the scaling features to form a content signature.

11. (original): A method of generating a content signature for a signal comprising the steps of:

dividing the signal into at least one set; and
identifying perceptual edges of the set, the edges comprising the signature of the set.

12. (original): A method of generating a content signature for a signal comprising the steps of:

applying trellis coded quantization to a data set to find a minimum relationship between the data set; and
storing the minimum relationship as a signature of the data set.

13. (original): A method according to claim 12, wherein trellis coded quantization can be modeled as a trellis diagram representing the data, and the minimum relationship is the shortest distance through the trellis diagram.

14. (currently amended): A method of deriving a content signature for a content item, the content item comprising a digital watermark embedded therein, the digital watermark comprising at least an orientation [a grid] component, said method comprising the steps of:

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decoding the embedded digital watermark from the content item to retrieve the orientation [grid] component;

reorienting [rescaling] the content item based on the orientation [grid] component;
and

deriving a content signature for the reoriented content item.

15. (currently amended): The method of claim 14, wherein said reorienting [rescaling] comprises at least one of rotating the content item, scaling the content item and translating the content item.

16. (original): The method of claim 15, wherein the content item comprises one of audio, video and image data.

17. (original): A method of handling a content item, the content item comprising a digital watermark embedded therein, the digital watermark comprising at least a message, said method comprising the steps of:

decoding the digital watermark to obtain the message; and
deriving a content signature for the content item.

18. (original): The method of claim 17, wherein the message comprises a content distributor identifier to be used to identify the distributor of the content item.

19. (original): The method of claim 18, wherein the content signature is used to identify the content item.

20. (original): The method of claim 19, further comprising the steps of selecting a database for interrogation based on the distributor identifier, and identifying information associated with the content item and stored in the selected database with the content signature.

21. (original): The method of claim 17, wherein the message comprises a content signature.

22. (original): The method of claim 21, further comprising the step of comparing the message content signature with derived content signature.

23. (original): The method of claim 22, further comprising the step of deeming the content item authentic when the message content signature and the derived content signature coincide.

24. (original): The method of claim 17, wherein the message comprises a trigger to indicate that said deriving step should be performed.

25. (original): A method to derive a content signature for a video frame or image comprising the steps of:

identifying an area in the video frame or image;

determining a center of mass of the video frame or image; and

providing a content signature for the video frame or image based at least on the center of mass.

26. (original): The method of claim 25, wherein in the center of mass is determined by identifying edges of the area and then determining a center based on the identified edges.

27. (original): The method of claim 25, wherein the area comprises a plurality of pixels, and wherein in the center of mass is determined by multiplying each pixel's luminescence with its location from a predetermined reference point in the area, summing all pixels, and dividing by the average luminescence of the pixels.

28. (original): The method claim 27, wherein the area comprises a plurality of color planes, and a center of mass is calculated for each color plane.

29. (original): The method of claim 25, further comprise the step detecting edges in the area before said step of determining a center of mass.

30. (original): The method of claim 25, wherein the area comprises an object.

31. (original): The method of claim 25, wherein the area comprises a video frame.

32. (original): A method of generating a fingerprint related to a content item comprising the steps of:

- pseudorandomly selecting a segment of the content item; and
- fingerprinting the selected segment of content item.

33. (original): The method of claim 32, wherein the segment is pseudorandomly selected based on a known key.

34. (original): The method of claim 33, wherein the known key comprises a user identifier.

35. (original): The method of claim 32, wherein the fingerprinting comprises at least one of mapping perceptually relevant features, a frequency domain analysis, hashing and a lossy transformation.

36. (original): A method of calculating a content signature from a content item, the content item comprising at least one cue signal, said method comprising the steps of:
sensing the cue signal from the content item; and upon sensing the cue signal, determining a content signature for at least a portion of the content item.

37. (original): The method of claim 36, wherein the content item is video and the cue signal comprises a fade to black indicator.

38. (original): The method of claim 36, wherein the cue signal comprises a pattern of frequency components for the content item.

38. (original): The method of claim 36, wherein the content item is video and the cue signal comprises a contrast of a center of a video frame.

40. (original): The method of claim 36, further comprising the step of determining timing intervals within the content item based on the cue signal.

41. (original): A data management method comprising the step of:
deriving a content signature from a content item; and
providing the content signature to a database constructed as content addressable memory (CAM); and
obtaining data from the database associated with the content signature.

42. (original): The method of claim 42, wherein the data comprises at least one of a URL, IP address and metadata.

43. (original): The method of claim 41, wherein the database includes groups of sub-fingerprints, and the content signature is used interrogate the database to identify a related group of sub-fingerprints.

44. (new): A method of returning a content item to a base state prior to deriving a signature of the content item, the content item comprising a digital watermark embedded therein, the digital watermark comprising at least an orientation component, said method comprising the steps of:

A₂ reading the digital watermark embedded in the content item to obtain the orientation component;

reorienting the content item based at least in part on the orientation component, wherein reorienting the content item returns the content item to the base state; and determining a signature of the content item from the reoriented content item.

45. (new): The method of claim 44, further comprising:
comparing the signature to a predetermined signature; and
determining at least one of authenticity of the content item and identity of the content items through said comparing step.

46. (new): The method of claim 44, wherein said reorienting comprises at least one of scaling, rotating and translating the content item.

Ar 47. (new): A method to calculate a fingerprint of a media signal, wherein the media signal comprises a steganographic signal including an orientation component, said method comprising:

reading the media signal to obtain the orientation component;

determining at least one of a type of distortion and an amount of distortion based at least on the obtained orientation component;

adjusting the media signal to compensate for the determined distortion; and

calculating a fingerprint based on the adjusted media signal.
